Grade 9 Math – Section 1.1

Name: _____

1. Find each **square root**:

   A. $\sqrt{64}$ = 8 B. $\sqrt{49}$ = 7 C. $\sqrt{25}$ = 5

2. What is the **square** of each number?

   A. $9^2 \rightarrow 81$ B. $6^2 \rightarrow 36$

3. Calculate the number whose square root is: $\sqrt{?} = 4$ *do the inverse to work backwards

   A. $4^2 = 16$ B. $6^2 = 36$ C. $10^2 = 100$

4. Is 40 a perfect square? Explain why or why not.

   40 is NOT a perfect square because:
   ① you cannot multiply a number by itself to get 40
   ② the square root of 40 is an IRRATIONAL number.

5. Determine the value of each square root.

   a) $\sqrt{\frac{225}{49}} = \frac{15}{7}$ b) $\sqrt{\frac{9}{25}} = \frac{3}{5}$ c) $\sqrt{\frac{8}{98}} \overset{\div 2}{=} \sqrt{\frac{4}{49}} = \frac{2}{7}$ *reduce, then square root

   d) $\sqrt{6.76} = 2.6$ e) $\sqrt{327.61} = 18.1$ f) $\sqrt{0.0225} = 0.15$

6. Calculate the number whose square root is:

a) $\left(\frac{5}{7}\right)^2 = \frac{5}{7} \times \frac{5}{7} = \frac{25}{49}$

b) $(1.6)^2 = 2.56$

c) $(0.92)^2 = 0.8464$

7. Determine if each number below is a **perfect square**. Show your workings.

a) 2.89

$\sqrt{2.89} = 1.7$

Yes

b) $\frac{2}{50} \overset{\div 2}{\underset{\div 2}{}} = \frac{1}{25}$

$\frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$

yes!

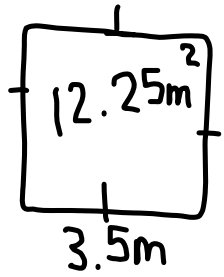
c) 0.004

$\sqrt{0.004}$ = IRRATIONAL #

NO

8. The area of a square garden is 12.25 m^2.

a) Determine the **perimeter** of the garden.



Side length = $\sqrt{\text{Area}}$

$= \sqrt{12.25}$

$= 3.5m$

Perimeter = $4 \times 3.5m$

$= 14m$

b) The owner decides to put a gravel pathway around the garden. This reduces the area of the garden by 4.96 m^2. What is the new side length of the garden?

New Area = $12.25 - 4.96 = 7.29m^2$

Side length = $\sqrt{\text{Area}} = 2.7m$